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| 10/663,759 | 09/17/2003 | Tomoya Ohsugi | 242554US3 | 3825 | |
| 22850 | 7590 | 03/22/2007 | EXAMINER | | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | PHAM, HAI CHI | | |
| | | | ART UNIT | PAPER NUMBER | 2861 |

| SHORTENED STATUTORY PERIOD OF RESPONSE | NOTIFICATION DATE | DELIVERY MODE |
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| 3 MONTHS | 03/22/2007 | ELECTRONIC |

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/663,759 | OHSUGI, TOMOYA | |
| | Examiner | Art Unit | |
| | Hai C. Pham | 2861 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

WHENEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 December 2006.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 4-15, 18-24, 28-39 and 42-48 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 4, 5, 9, 10, 14, 15, 18-24, 28, 29, 33, 34, 38, 39 and 42-48 is/are allowed.

6) Claim(s) 6-8, 11-13, 30-32 and 35-37 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. ____ .
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ .
5) Notice of Informal Patent Application
6) Other: ____ .

DETAILED ACTION

Claim Objections

1. The following claims are objected to because of the following informalities:

Claims 28-29, 31-39, 43, 46:

- Each of the following claimed phraseologies “light source means”, “coupling lens means”, “holding face means” does not convey any function to the term “means” since the words “light source”, “lens” and “holding face” already and clearly define the respective claimed elements. It is suggested to use the following phraseologies “light emitting means”, “optical coupling means” and “holding face”.

Claim 30:

- Each of the following claimed phraseologies “light source means”, “coupling lens means”, “holding face means” and “supporting unit means” does not convey any function to the term “means” since the words “light source”, “lens”, “holding face” and “supporting unit” already and clearly define the respective claimed elements. It is suggested to use the following phraseologies “light emitting means”, “optical coupling means”, “holding face” and “supporting means”.

Claims 42, 44:

- Each of the following claimed phraseologies “light source means”, “coupling lens means”, “holding face means”, “light beam deflection means” and “optics system means” does not convey any function to the term “means” since the words “light

source", "lens", "holding face" and "optics system" already and clearly define the respective claimed elements. It is suggested to use the following phraseologies "light emitting means", "optical coupling means", "holding face", "light beam deflecting means", "focusing and scanning means".

Claim 47:

- "light beam scanning means" (lines 2 and 4) should read --light beam scanning unit-- to keep the consistency of the claimed terminology.

Claim 48:

- "light beam scanning means" (line 2) should read --light beam scanning unit-- to keep the consistency of the claimed terminology.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. The following claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11:

- The following limitation "ends of said elastically pressing member are fixed" at line 11 appears to be vague in that it is not known which part of the light source unit the ends of the elastically pressing member are fixed to.

Claim 13:

- Similarly, the following limitation "ends of said elastically pressing member are fixed" at line 12 appears to be vague in that it is not known which part of the light source unit the ends of the elastically pressing member are fixed to.

Claim 35:

- Similarly, the following limitation "ends of said elastically pressing member are fixed" at line 13 appears to be vague in that it is not known which part of the light source unit the ends of the elastically pressing member are fixed to.

Claim 37:

- Similarly, the following limitation "ends of said elastically pressing member are fixed" at line 13 appears to be vague in that it is not known which part of the light source unit the ends of the elastically pressing member are fixed to.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6-8 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima et al. (US 6,621,512) in view of Iwanaga (JP 8-7294).

Nakajima et al. discloses in Fig. 9 a multi-beam scanning apparatus having a multi-beam light source device, which comprises a plurality of light sources (at least the pair of semiconductor lasers 101 and 102), a plurality of coupling lenses (respective coupling lenses 104 and 115) each corresponding to a light source of said plurality of light sources, a coupling lens holding unit (projecting portion 112 holding the pair of coupling lenses 104 and 115) having the curved faces aligned in parallel to the optical axis of the pair of coupling lenses.

With regard to claims 6 and 30, Nakajima teaches a supporting unit (projecting portion 112) is formed, as one set, consisting of said lens holding unit with the curved faces aligned approximately in parallel to said optical axis of said pair of coupling lenses, and at least two sets of said supporting unit are formed integrally as one component (the lens holding unit holding the pair of coupling lenses is shown as a one component in the form of the projecting portion 112).

With regard to claims 7 and 31, Nakajima teaches a supporting unit (projecting portion 112) is formed, as one set, consisting of said lens holding unit with the curved faces aligned approximately in parallel to said optical axis of said pair of coupling lenses, and at least two sets of said supporting unit are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is identical to each other (the lens holding unit holding the pair of coupling lenses is shown as a one component in the form of the projecting portion 112 whose direction is parallel to the optical axis of the respective

coupling lenses and is identical to each other with regard to the optical axis, the main and sub-scanning directions).

With regard to claims 8 and 32, Nakajima teaches a supporting unit (supporting member 110) is formed, as one set, consisting of said lens holding unit with the curved faces aligned approximately in parallel to said optical axis of said pair of coupling lenses, and at least two sets of said supporting unit are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is symmetrical to each other (the lens holding unit holding the pair of coupling lenses is shown as a one component in the form of the projecting portion 112 whose direction is parallel to the optical axis of the respective coupling lenses and is symmetrical to each other with regard to the optical axis, the main and sub-scanning directions).

With regard to claim 40, Nakajima also teaches in Fig. 5 a light deflecting means (polygon mirror 42) for receiving and subsequently deflecting the light beams emanated from the light sources, and an optics system means (scanning lenses 43) for focusing the light beams onto a means to be scanned (photosensitive drum 46) and scanning along a primary scanning direction.

However, Nakajima et al. fails to teach each set of the coupling lens holding unit or the projecting portion (112) having a first and a second holding faces and a pressing member pressing a side portion of each of the pair of coupling lenses against said first and said second holding faces so as to thereby hold each of the pair of coupling lenses.

However, Iwanaga, an acknowledged prior art, discloses an V-groove-shaped lens holder (21) (Fig. 2) for holding the coupling lens (collimator lens 2) whose side portion is abutted on the V-grooves abutting surfaces (21a) of the lens holder by pressing the elastic member (3) against the coupling lens (English translation [0014]).

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the second lens support member as an elastic member to directly press-fit the coupling lens against the lens holder in the device of Nakajima as taught by Iwanaga. The motivation for doing so would have been to provide a flexible affixing means for retaining the collimator lens in place in the collimator lens mount while providing an easy way to adjust the focusing of the coupling lens without using adhesive as suggested by Iwanaga at paragraphs [0005]-[0006].

With regard to claims 41 and 47-48, Nakajima teaches the plural light sources being arranged in a row, a toner cartridge (904) and developing roller (903) for rendering the image visible.

6. Claims 11-12 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima in view Kitahara (JP 8-5882).

Nakajima discloses all the basic limitations of the claimed invention except for the coupling lens holding unit or the projecting portion (112) having a first and a second holding faces and the elastically pressing member pressing a side portion of each of the pair of coupling lenses against said first and said second holding faces so as to thereby hold each of the pair of coupling lenses, the elastically pressing member being formed

of planar elastic material and whose ends are fixed approximately symmetric with respect to the coupling lens.

Kitahara discloses a lens holding body for holding a lens (2) comprising a support base (4a) having a V-groove whose first and second faces are in contact with the lens (2) as it is elastically pressed by the planar elastic member (6), the ends of the elastic member being fixed to the support base by the fixing means (14) (Figs. 4c).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the device of Nakajima with the lens holding member having a first and second holding faces and an elastic pressing member as taught by Kitahara for the purpose of firmly fixing the lens to its supporting member while preventing any shifting position of the lens as suggested by Kitahara.

Allowable Subject Matter

7. Claims 4-5, 9-10, 13-15, 18-24, 28-29, 33-34, 37-39 and 42-48 are allowed.
8. Claims 13 and 37 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Arguments

9. Applicant's arguments filed 12/14/06 have been fully considered but they are not persuasive.

Applicant argued that the structures of the light beam scanning unit as taught by Nakajima et al. and Iwanaga are different and that there is no motivation for doing so

would have been combining the two references. The examiner respectfully disagrees. Iwanaga teaches the lens holding member including a planar elastic member for holding and pressing the collimator lens against the first and second face in the form of a V-groove on the supporting base and strongly suggests that using the elastic pressing member in the place of adhesive would give greater advantage in positioning the collimator lens with respect to the optical axis of the light beam. Therefore, an ordinary skill person in the art would be motivated to modify the device of Nakajima et al. by incorporating the elastic pressing member in the place of adhesive as taught by Iwanaga. Moreover, Nakajima et al. teaches the provision of two sets of the lens holding devices for holding the respective pair of coupling lens, therefore it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify each set of the lens holding devices by incorporating the respective elastic pressing member into the Nakajima et al. device as taught by Iwanaga.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hai Pham

HAI PHAM
PRIMARY EXAMINER
March 16, 2007